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(58) Field of search  
B7J

(54) Cover for motor vehicle

(57) A retractable cover for a motor vehicle comprises one or more generally rectangular panels (3,7,8) consisting of flexible material, adapted to limit penetration of solar radiation, the said panel(s) being supported on a frame including a central frame portion (4,5) adapted to be mounted on a vehicle roof, longitudinal extension frame portions to extend forwardly and rearwardly from the central frame portion (4,5), the extension frame portions being either removably attached to the central frame portion (4,5) or retractable.

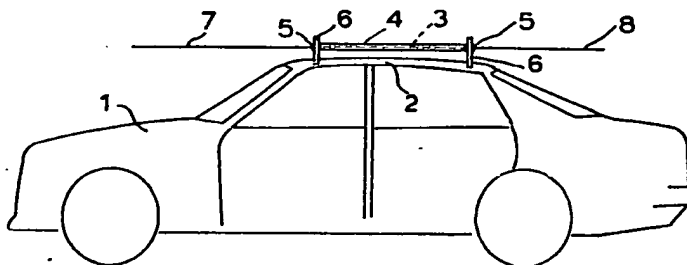


FIG. 1 .

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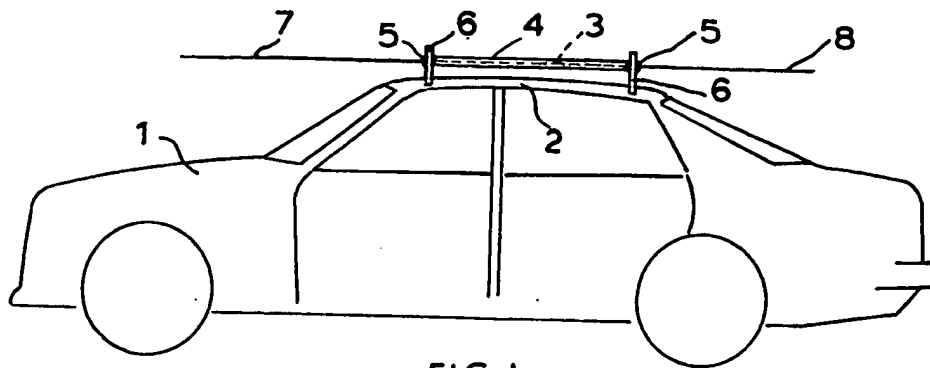


FIG. 1.

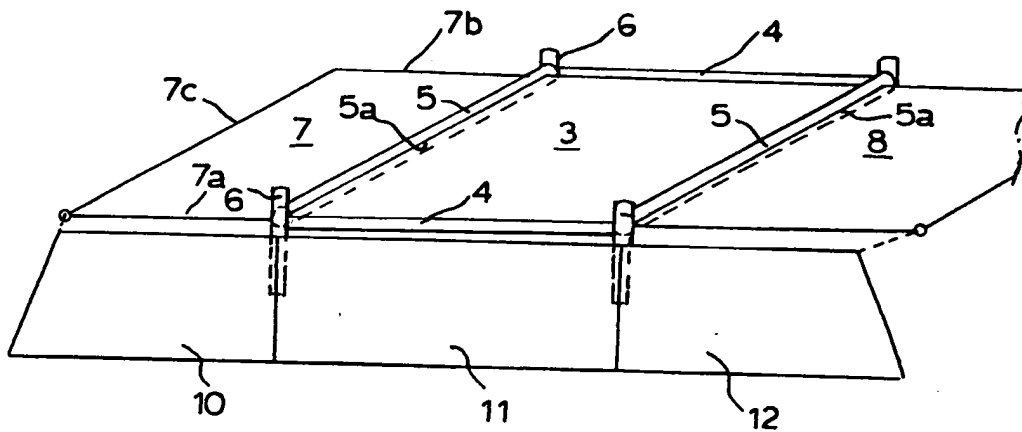


FIG. 2.

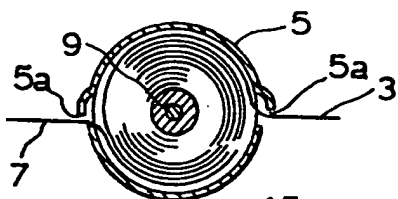


FIG. 3.

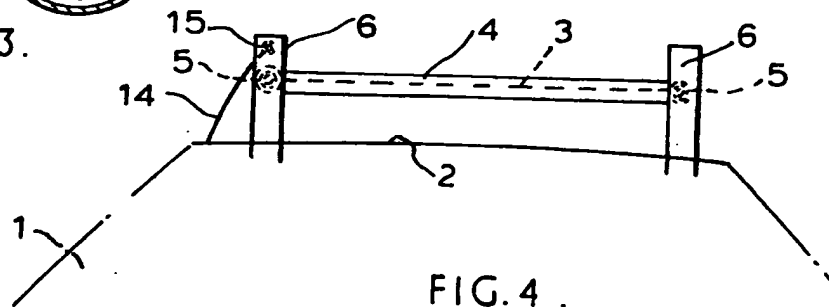


FIG. 4.

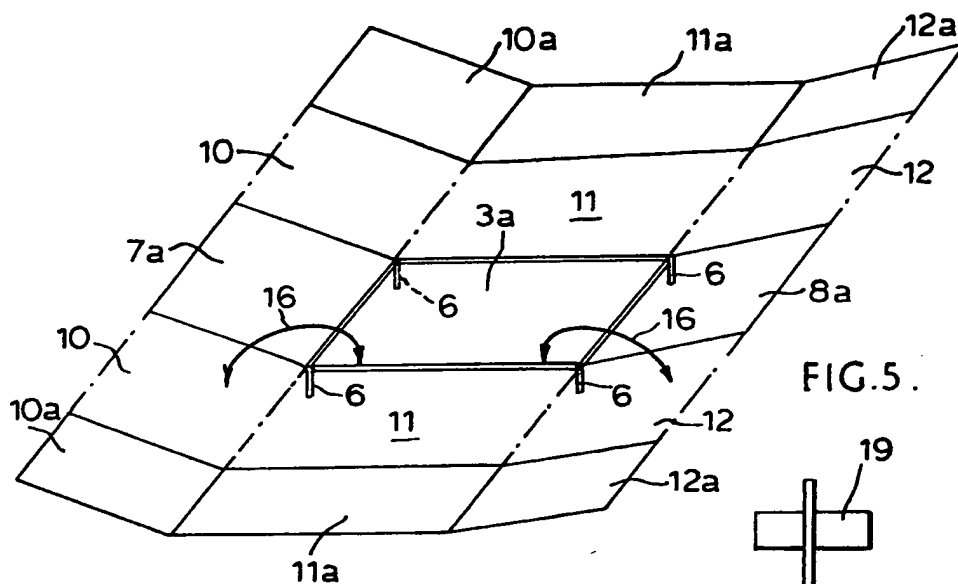


FIG. 5.

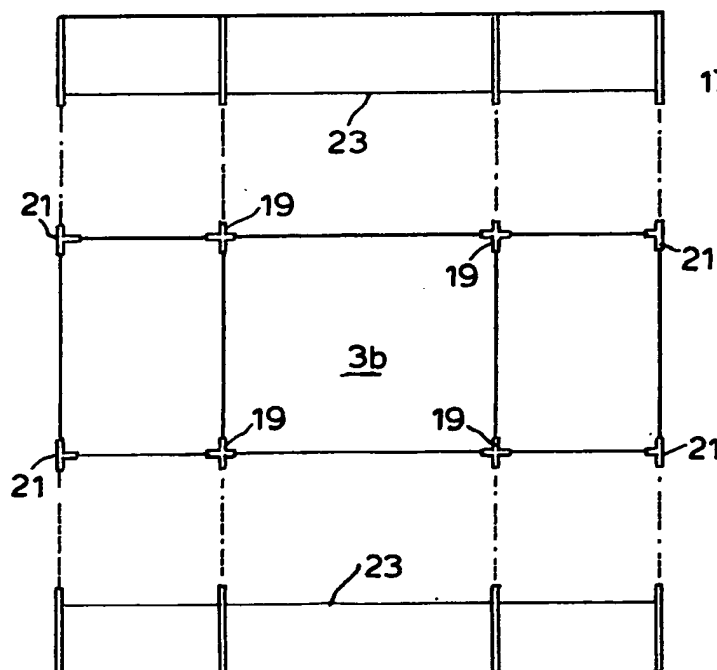


FIG. 6.

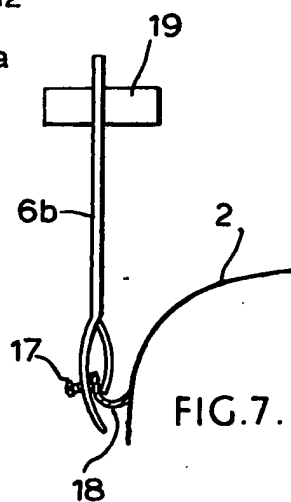
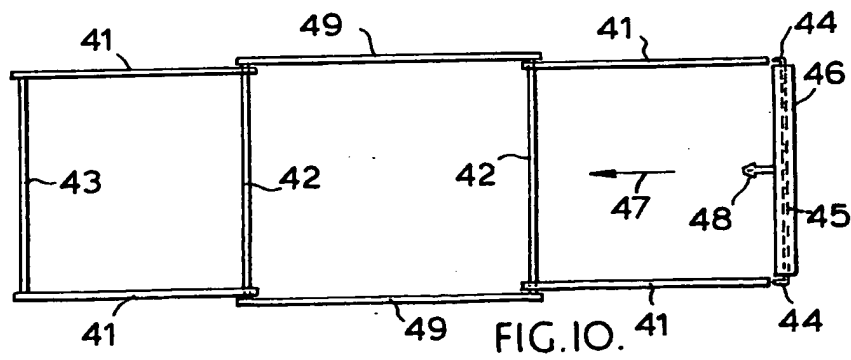
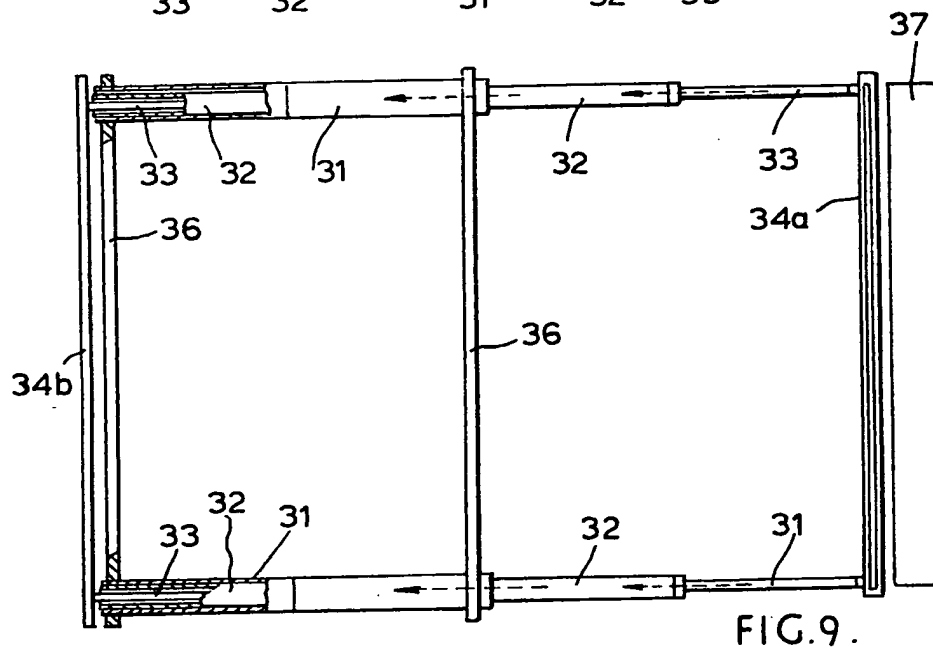
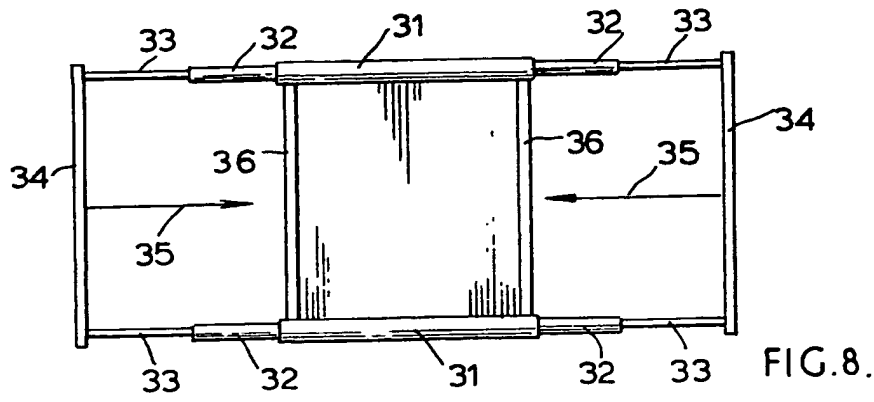


FIG. 7.



## SPECIFICATION

## Cover for motor vehicle

5 This invention relates to covers for motor vehicles.

One problem with motor vehicles, especially passenger cars, is that in hot weather it is very difficult to keep the interior temperature of the vehicle down to reasonable levels when the vehicle is stationary. Many vehicles have air conditioning, but this cannot normally be used when the vehicle is not being driven. The problem of interior temperature is serious in temperate climates during the summer months, but is even greater in hotter countries. Partial relief can be obtained by parking in the shade, but this is not always available and also an area which is in the shade when the vehicle is parked may not remain in the shade for many hours. Excess temperature in the vehicle not only makes it extremely uncomfortable for persons re-entering the vehicle, but it can be dangerous for person or animals necessarily remaining within the vehicle, and detrimental to perishable goods.

In accordance with the present invention, there is provided a retractable cover for a motor vehicle comprising one or more generally rectangular panels consisting of flexible material, adapted to limit penetration of solar radiation, the said panel(s) being supported on a frame including a central frame portion adapted to be mounted on a vehicle roof, longitudinal extension frame portions to extend forwardly and rearwardly from the central frame portion, the extension frame portions being either removably attached to the central frame portion or retractable.

The central frame portion itself may be semi-permanently attached to the vehicle roof in the manner of a roof rack. In such a case, the extension frame portions may be telescopically received within frame members of the central frame portion. Alternatively, they may be hingedly attached so as to retract by folding over the central frame portions. In this arrangement, a roller blind construction may be removably attached to a transverse frame member of one of the extension frame portions, and is adapted to stretch over the central frame portion and both extension frame portions and to be attached to a transverse frame member of the other extension frame portion.

As a further alternative, some or all of the extension panels, particularly the longitudinal extension panels, may be retracted by reeling into frame members of the central frame portion, made in the form of tubing. Tensioning frames for the retractable panels could be telescopically received in the other frame members of the central frame portion.

In such an arrangement, the lateral extension could be clipped on to the central frame portion and the longitudinal extension frame portions.

Two alternative positions of the lateral extension frame portions could be provided so that they could be arranged to extend either generally horizontally to provide an area of shade around the vehicle, or generally vertically to limit the ground

area occupied, but still protect the windows from the sun.

Where the central frame portion is semi-permanently attached to the roof, the installation may include a wind deflector to assist in streamlining so as to reduce noise and drag induced by the retracted cover when the vehicle is being driven.

The panels themselves may be of a netting construction which is available for protection against the sun. Other types of material, including a reflective material, may be used as alternatives.

The invention will be further described with reference to the accompanying diagrammatic drawings, in which:

*Figure 1* is a side elevation showing part of a vehicle body with a cover in the extended position;

*Figure 2* is a partial perspective view showing lateral extensions in a dropped position;

*Figure 3* is an enlarged sectional view of a frame member with a cover panel partially rolled in;

*Figure 4* is a side elevation showing the cover in retracted position;

*Figure 5* is a perspective view of an alternative form of cover in open position;

*Figure 6* is a plan view of a further alternative form of cover in open position;

*Figure 7* is a section showing attachment of cover of *Figure 6* to a vehicle roof; and

*Figure 8* is a plan view of a still further alternative form of the invention;

*Figure 9* is a plan view of a yet further form of the invention; and

*Figure 10* is a plan view showing a currently preferred form of the invention.

Turning first to *Figures 1* to *4*, a motor vehicle body is diagrammatically illustrated by reference numeral 1 and the roof portion thereof by the reference 2. Secured to the roof in the manner of a conventional roof rack is a support frame for a central panel 3. The support frame consists of longitudinal frame members 4 and transverse frame members 5, all of which frame members are of tubular construction. The frame members 4 and 5 are supported on pillars 6 which stand on the vehicle roof and are held in position by clamps (not shown). The central panel 3 covers the area of the vehicle roof within the confines of the frame members 4 and 5 and longitudinal extension panels 7 and 8 extend forwardly and rearwardly to provide shade for the vehicle windscreen and rear window respectively.

Each of the panels 3, 7 and 8 may be of a protective net construction, but other flexible materials, including reflective material, may be used. The panels are held taut by bounding frame members which are illustrated in *Figure 2* for the panel 7, as being lateral frame members 7a and 7b and a forward frame member 7c. It is envisaged that the tubular frame member 5 will include means for reeling in the adjacent flexible extension panels 7 or 8, and one of them may also reel in the central panel 3. The lateral frame members 7a and 7b, and the corresponding members associated with the panel 8, may be telescopically received within the side frame members 4, and the whole mechanism

may be geared so that retraction and extension of the panels 7 and 9 takes place simultaneously. Figure 3 shows how a hollow frame member 5 can be provided with slots 5a for the panel material to extend through, and with a reeling drum 9 on which the panels can be wound.

Figure 2 also shows one set of lateral extension panels 10, 11 and 12, and it will be appreciated that a second similar set will be provided on the opposite side of the vehicle. These side cover panels 10, 11 and 12 are arranged to be mechanically attached, e.g. into slots, in the frame members, and they may be either attached in the fixed position to extend out horizontally or to drop down vertically, or they may be hinged between these positions.

Figure 4 shows a deflector 14 pivoted as shown at 15 onto the pillars 6 so as to reduce drag and wind noise arising from the presence of the retracted cover on the roof of the vehicle. It will be seen that when the cover is being extended, this deflector will pivot out of the way, either automatically or manually.

The lateral extension panels 10, 11 and 12, may be mounted somewhat spaced from the panels 3, 7 and 8, or alternatively they may be mounted close to them so as to have a first section which extends in a horizontal direction in extensions of those panels and then has a section which extends vertically downwardly, or is hinged so as to extend either horizontally or vertically downwardly as required.

Turning now to Figure 5, this shows diagrammatically a central panel 3a mounted on pillars 6 which are permanent or semi-permanent fixture on the vehicle roof. The forwardly and rearwardly extending panels 7a and 8a are hingedly attached to the centre panel 3a so as to pivot between a folded position above that panel and an extended position, as indicated by the arrows 16.

Lateral extension panels 11 may be removably attached or hinged to the sides of the central panel 3a and these again have longitudinal extensions 10 and 12, and all of these include hinged further extensions 10a, 11a and 12a which may thus either extend out generally horizontally or drop down vertically to provide direct shade over the vehicle windows. In this arrangement, the whole set of panels may be made to retract so as to be mounted on the car roof, or the side panels may be removable so as to be separately stowed.

Turning now to Figures 6 and 7, there is shown an arrangement which is intended to be separately stowed and merely mounted on the car roof when required. A central panel 3b is first mounted on the vehicle by means of pillars 6b which is shown in Figure 7 as being provided with clamping screws 17 for attachment to the conventional rain channel or gutter 18 of the vehicle. In this arrangement, each of the panels consists of a frame member on each side, e.g., extending through the turned over edge of the material forming the panel, and the pillars 6b carry cruciform connectors 19 to interconnect these side frame members on the panel 3b and the adjacent panels. T section connectors 21 are also

provided to interconnect these frame members along the edges of the cover.

As in the previous arrangement, the lateral extension panels may be hinged as along the lines 23.

This last arrangement has the advantage that the cover is readily assembled onto the vehicle roof when required and can be stowed in a very small space, or at the same time allow the vehicle to be driven without the detrimental appearance and drag effects of a permanent attachment resembling a roof rack.

Figure 8 shows an arrangement in which a central frame portion has tubular side members 31 which telescopically receive extension frame members 32 and 33, which are telescopically related to each other. Transverse extension frame members 34 span the members 33 at front and back and are tubular to receive rolled up blinds which pull out as indicated by the arrows 35 and are attachable to transverse members 36 of the central frame portion.

The figure 9 arrangement is very similar to the figure 8 arrangement, except that the front transverse member 34a carries a long blind which can extend as far back as the rear transverse member 34b, when in its rearwardly extended position. Also, the front transverse member 34a carries a wind deflector 37 to reduce drag when the vehicle is being driven with the cover assembled but in the retracted position.

In the arrangement of figure 10, the expense of telescopic extension, which entails sliding bushes and other mechanical complications, is avoided by having front and rear lateral extension arms 41 pivoted to the central frame portion, e.g. onto the transverse frame members 42 thereof. While one of the extension frames, shown as the rear one, has a transverse member 43, this is omitted from the other extension frame. The arms 41 of this frame are tubular and open at their distal ends to receive spigots 44 extending radially from a shaft 45 of a blind assembly 46. This blind extends in the manner of a conventional roller blind, being of net or fabric, as indicated by the arrow 47 and may be attached by its tag 48 to the transverse member 43 of the rear extension frame. The blind assembly is thus readily removable and is stowable in the boot of the car. The arms 41 may be stowed laterally inwardly of the side frame members 49 of the central frame portion.

In all the arrangements of figures 9 and 10, lateral extensions as previously described may be added on.

Various modifications may be made within the scope of the invention.

## CLAIMS

1. A retractable cover for a motor vehicle comprising one or more generally rectangular panels consisting of flexible material, adapted to limit penetration of solar radiation, the said panel(s) being supported on a frame including a central frame portion adapted to be mounted on a vehicle

roof, longitudinal extension frame portions to extend forwardly and rearwardly from the central frame portion, the extension frame portions being either removably attached to the central frame portion or retractable.

2. A retractable cover as claimed in claim 1, in which lateral extension panels are mounted on removably attached or retractable lateral extension frame portions extending on either side from the central frame portion.

3. A retractable cover as claimed in claim 1 or 2, in which the central frame portion itself is semi-permanently attached to the vehicle roof in the manner of a roof rack.

4. A retractable cover as claimed in claim 3, in which a wind deflector is provided to assist in streamlining so as to reduce noise and drag.

5. A retractable cover as claimed in claim 3 or 4, in which front and rear extension frames are telescopically received within side portions of the central frame portion.

6. A retractable cover as claimed in claim 3 or 4, in which the extension frame portions are hingedly attached so as to retract by folding over the central frame portions.

7. A retractable cover as claimed in claim 6, in which a roller blind construction is removably attached to a transverse frame member of one of the extension frame portions, and is adapted to stretch over the central frame portion and both extension frame portions and to be attached to a transverse frame member of the other extension frame portion.

8. A retractable cover as claimed in any of the preceding claims, wherein the arrangement comprises a central panel and longitudinal extension panels and in which the longitudinal extension panels are retractable by reeling into tubular frame members of the central frame portion.

9. A retractable cover as claimed in claim 8, in which the longitudinal extension frame portions for the retractable panels are telescopically received within the other frame members of the central frame portion.

10. A retractable cover as claimed in claim 8 or 9, in which the lateral extension frame portions are clipped onto the central frame portion and the longitudinal extension frame portions.

11. A retractable cover as claimed in any of the preceding claims in which two alternative positions of the lateral extension frame portions are provided so that they could be arranged to extend either generally horizontally to provide an area of shade around the vehicle, or generally vertically downwardly to limit the ground area occupied, but still protect the windows from the sun.

12. A retractable cover as claimed in any of the preceding claims, in which the panels themselves are of a netting construction.

13. A retractable cover for a motor vehicle, substantially as hereinbefore described with reference to the accompanying drawings.

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